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India

NDRF's chemical and biological team to assess Vizag gas leak

Hindustan Times, May 7, 2020

The situation at the LG Polymer industry in RR Venkatapuram village of Visakhapatnam where a gas leak killed at least 11 people early Thursday has been contained, the chief of the National Disaster Response Force (NDRF) said. "The leakage from factory is now minimal, but the NDRF will be there till it is totally plugged. Overall the situation is under control. The NDRF personnel will be there to assist local administration till it is required," the force's Director General S N Pradhan said.

A special team of the NDRF with expertise in chemical, biological and nuclear fields will be flying in from Pune to study the situation. "The chemical, biological, nuclear and radiological team of the NDRF is the 5th battalion in Pune. This is a chemical disaster and that is why the Commandant Anupam Shrivasta and his team of four personnel will be flying in from Pune to assess the situation on the ground and give any assistance required,"

https://www.hindustantimes.com/india-news/ndrf-s-chemical-and-biological-team-to-asses-vizag-gas-leak/story-hc8gQuaIBOLmoGk9Bi8NKJ.html

India displays its maritime might in response to China's moves in Indian Ocean

Anirban Bhaumik

Deccan Herald, May 10, 2020

From a not-so-subtle display of its maritime might, while repatriating its citizens stranded in the Maldives to sending a navy ship with food and medicines to help Madagascar, Comoros, Seychelles and Mauritius to deal with the COVID-19 crisis, India is responding to China's bid to spread its tentacles in the Indian Ocean Region.

New Delhi has of late been also worried over reports of China deploying a fleet of underwater drones (Unmanned Underwater Vehicles) in the Indian Ocean. The drones were launched by China's survey vessel Xiangyanghong-06 in December and recovered in February. The stated objective of deploying the drones was conducting scientific research, but they can also be used for military purposes – like detecting and neutralizing underwater mines and helping submarines sail through.

https://www.deccanherald.com/national/covid-19-india-displays-its-maritime-might-in-response-to-china-s-moves-in-indian-ocean-835976.html

National Technology Day: Remembering Pokhran-II nuclear tests

The Indian Express, May 11, 2020

Today (May 11) is National Technology Day, celebrated to mark the day on which India successfully test-fired its first nuclear bombs in 1998. Between May 11 and May 13, 1998, five devices were tested during the nuclear tests in Rajasthan's Pokhran. India is currently among eight countries in the world that have a publicly known nuclear weapons programme.

Prime Minister Narendra Modi on Monday wrote on Twitter, "On National Technology Day, our nation salutes all those who are leveraging technology to bring a positive difference in the lives of others. We remember the exceptional achievement of our scientists on this day in 1998. It was a landmark moment in India's history.

https://indianexpress.com/article/explained/national-technology-day-remembering-pokhran-ii-nuclear-tests-6404983/

China

China urged to expand nuclear arsenal to deter US warmongers
Liu Xuanzun
Global Times, May 8, 2020

Facing rising strategic threats from the US, China needs to increase its number of nuclear warheads and complete a technologically advanced nuclear triad by developing the H-20 strategic stealth bomber and JL-3 submarine-launched ballistic missiles to deter potential impulsive military action by US warmongers, experts said. Having a nuclear arsenal appropriate to China's position will help establish a more stable and peaceful world order, which will be beneficial for the whole world, they said. This year, the US has been applying amplified military pressure on China, sending all manner of warships and warplanes at an increasing frequency to areas including the South China Sea, East China Sea and Taiwan Straits.

The Pentagon is also planning to deploy ground-launched Tomahawk cruise missile installations to the first island chain to contain China's military development, which would not have been possible had the US not quit the INF Treaty, Reuters reported on Wednesday. The US has sent B-1B strategic bombers to the East China Sea on at least three occasions, edging near the island of Taiwan. The USS Theodore Roosevelt nuclear-powered aircraft carrier strike group and the USS America amphibious assault ship carried out exercises on March 15 in the South China Sea. After COVID-19 broke out on the aircraft carrier, even more frequent military provocations were made by the US in an attempt to show the US' military strength had not been hindered. Making matters worse, the US has been advocating the development and actual use of low-yield nuclear weapons, claiming they are "safer" than more destructive ones. Chinese military experts urged the country to expand its nuclear arsenal to deter the US from its ambition to contain China through military means and dispel thoughts of irrational military action by US warmongers. China needs to expand the number of its nuclear warheads to 1,000 in a relatively short time and have at least 100 DF-41 strategic missiles to curb US strategic ambitions and impulses toward China, said Global Times Editor-in-Chief Hu Xijin on Friday.

http://www.globaltimes.cn/content/1187775.shtml

China fires its latest underwater nuclear missile into spotlight with science prize
Liu Zhen
South China Morning Post, May 12 , 2020

Researchers involved in the development of China's most advanced submarine-launched nuclear missile, the JL-3, have been recognised in one of the country's top science awards.
The team that worked on the "underwater-launched large solid-fuel carrier rocket", or SLBM, is among the 10 nominated to receive a National Award for Excellence in Innovation. China has not officially confirmed it is developing the JL-3 – or Big Wave – missile, but the Chinese navy has tested it, as reported by the South China Morning Post.

The People's Liberation Army (PLA) Rocket Force is developing its third-generation SLBM JL-3, with a range of over 12,000km (7,450 miles), far enough to hit the United States if the missile was launched from the Chinese coast. China conducted a few test flights in 2018 and 2019. Chinese military observers have said the missile tests were in response to US President Donald Trump's targeting of China in his deterrence strategy. This missile's predecessor, JL-2, which had a range of 7,400km, was deployed on Type 094A nuclear submarines for operational patrol in 2015, signalling that China finally had a credible sea-based nuclear capability. The new intercontinental-range solid-fuel JL-3 is estimated to be fully integrated with the next-generation submarine Type 096 in 2025.

https://www.scmp.com/news/china/military/article/3084063/china-fires-its-latest-underwater-Nuclear-missile-spotlight

Pakistan

'Kept prisoner': Pakistan's nuclear weapons programme architect

Aljazeera, May 1, 2020

Abdul Qadeer Khan, who made international headlines in 2004 after publicly confessing his role in global nuclear proliferation, has petitioned Pakistan's top court to say he is being "kept prisoner" by government agencies and not allowed to plead his case for freedom of movement. Khan, widely described as the architect of the nuclear weapons programme in Pakistan that tested its first atomic bomb in 1998 to rival that of neighbouring India, was sacked from his official position after his confession, but granted clemency by then-President Pervez Musharraf.

He has since lived a heavily guarded and mostly secluded life in an upscale Islamabad neighbourhood. Authorities say he is under guard for security reasons. "I had been kept as a prisoner having no free movement or meeting with anybody," Khan said in a handwritten note submitted to the Supreme Court on Thursday. The 84-year-old is said to have helped supply designs, hardware and materials to make enriched uranium for atomic bombs to Iran, Libya and North Korea. A global nuclear watchdog, the International Atomic Energy Agency, had said Khan was an important part of the nuclear black market and had help from people in many different countries.

https://www.aljazeera.com/news/2020/05/prisoner-pakistan-nuclear-weapons-programme-architect-200515193223732.html

USA

Producers announce pre-COVID uranium output

World Nuclear News, May 4, 2020

Kazatomprom today said its production for the quarter ending on 31 March was 5221 tU (on a 100% basis), down from 5294 tU for the same period in 2019. The Kazakh producer in April announced measures to reduce the risk of COVID-19 spreading to its mine sites, resulting in a lower level of wellfield development activity and thus a reduction in production volumes. It has revised its 2020 guidance due to the impact of COVID-19, and now expects its production volume for the year to be between 19,000 tU and 19,500 tU (previously 22,750 tU to 22,800 tU). The reduced production level is not expected to impact the company's 2020 sales obligations, which implies the fulfillment of all the contractual commitments to customers, it said.

The ongoing global situation and the spread of COVID-19 has negatively impacted the construction schedule for Kazatomprom's nuclear fuel assembly plant in Kazakhstan, with lockdowns and travel restrictions imposed by many countries preventing equipment suppliers from sending the required specialists for the installation and calibration of the equipment. As a result, the planned completion and commissioning schedule for the plant will be affected and a new timeline will be disclosed once it is known, the company said.

https://www.world-nuclear-news.org/Articles/Uranium-producers-announce-pre-COVID-production

A nuclear waste site where the biggest fear isn't radiation, but coronavirus

Hallie Golden

The Guardian, May 4, 2020

For more than a month, coronavirus has brought cleanup of a 586-square-mile decommissioned nuclear production complex in south-eastern Washington state to a near standstill. Most of the more than 11,000 employees at the Hanford site were sent home in late March, with only essential workers remaining to make sure the "most toxic place in America" stays safe and secure.

Now with signs that Washington has turned a corner with the virus and the state's governor slowly starting to relax some safety measures, Hanford workers are looking at the very real possibility of returning to work. But after facing those initial few weeks of Washington's coronavirus crisis on-site at Hanford, workers say they received little information and even fewer safety measures from leadership, and some employees are terrified by the prospect.

https://www.theguardian.com/us-news/2020/may/04/hanford-nuclear-waste-site-coronavirus-washington

U.S. should keep Congress informed about nuclear talks with Saudis: GAO

Timothy Gardner

Reuters, May 5, 2020

The U.S. Departments of State and Energy should commit to regular briefings to relevant committees in Congress on talks about nuclear power cooperation with Saudi Arabia, a congressional watchdog

said in a report on Monday. The Government Accountability Office, or GAO, report said Congress should consider amending the 1954 Atomic Energy Act, or AEA, to require the briefings for the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations about negotiations on nuclear power sharing.

Lawmakers concerned about nonproliferation issues associated with nuclear power development had complained they were being kept in the dark about Trump administration talks with Saudi Arabia, many of which were led by former Energy Secretary Rick Perry. Concern grew after Crown Prince Mohammed bin Salman told CBS in 2018 that the kingdom did not want to acquire a nuclear bomb, but would do so if its rival Iran did so. Riyadh could announce a tender this year for two nuclear power reactors, its first commercial ones. Russia, China, South Korea and France have also been in talks about building reactors there.

https://www.reuters.com/article/us-usa-saudi-nuclearpower/u-s-should-keep-congress-informed-about-nuclear-talks-with-saudis-gao-idUSKBN22G2XV

Special Report: U.S. rearms to nullify China's missile supremacy

David Lague

Reuters, May 6, 2020

As Washington and Beijing trade barbs over the coronavirus pandemic, a longer-term struggle between the two Pacific powers is at a turning point, as the United States rolls out new weapons and strategy in a bid to close a wide missile gap with China. The United States has largely stood by in recent decades as China dramatically expanded its military firepower. Now, having shed the constraints of a Cold War-era arms control treaty, the Trump administration is planning to deploy long-range, ground-launched cruise missiles in the Asia-Pacific region.

The Pentagon intends to arm its Marines with versions of the Tomahawk cruise missile now carried on U.S. warships, according to the White House budget requests for 2021 and Congressional testimony in March of senior U.S. military commanders. It is also accelerating deliveries of its first new long-range anti-ship missiles in decades.

https://www.reuters.com/article/us-usa-china-missiles-specialreport-us/special-report-u-s-rearms-to-nullify-chinas-missile-supremacy-idUSKBN22I1EQ

Alloy clear for use in high-temperature reactors

World Nuclear News, May 6, 2020

The Boiler and Pressure Vessel Code lays out design rules for how much stress is acceptable and specifies the materials that can be used for power plant construction, including in nuclear power plants. Adhering to these specifications ensures component safety and performance. INL spent 12 years qualifying Alloy 617, with a USD15 million investment from the US Department of Energy. A team at INL, in collaboration with groups at Argonne National Laboratory and Oak Ridge National

Laboratory, as well as industry consultants and international partners, has now received approval from ASME for the alloy's inclusion in the Code. Designers working on new high-temperature nuclear power plant concepts now have more options when it comes to component construction materials.

"It's a pretty substantial accomplishment," said Richard Wright, an INL laboratory fellow emeritus who headed the INL part in, and overall management of, the project. "In contrast to light water plants, the commercial fleet, where you might have 50 or 100 materials that you could use, there were exactly five you could use for high-temperature reactors." Unlike light water reactors, which operate at around 290°C, the proposed molten salt, high-temperature, gas-cooled or sodium reactors will run two or more times hotter. So, determining what happens to Alloy 617 over time at a given temperature was critical. Any measurements had to be done on different batches of Alloy 617 to account for slight variations in composition and manufacturing. Some of the tests were quick, like measuring how much stress the material could take before it breaks. However some of the tests, like those involving creep (the tendency of a substance to change shape over time), take years.

https://www.world-nuclear-news.org/Articles/Alloy-qualified-for-use-in-high-temperature-reacto

USA Nuclear Announces New Website to Expand Government and Non-Government Nuclear Security and Defense Applications

Cision, May 12, 2020

USA Nuclear, a leading advisor to America's nuclear infrastructure, has launched a new website at https://www.usanuclear.org/. The site offers nuclear perspectives in security, policy, defense, national security, and the protection of critical infrastructure for both domestic and international nuclear interests. With a modern design and expanded, user-centric functionality, the new website provides streamlined access to essential information on nuclear policy and regulation. Technical solution areas address emerging threats and how to mitigate risk while maintaining compliance to regulations. The website further introduces USA Nuclear executive leadership, together with a core team of subject matter experts and industry consultants.

Jerud Hanson, CEO of USA Nuclear, emphasizes the importance of nuclear technology on U.S. national security: "The website is our platform for communicating the essential considerations, research, and policies that inform our nation's nuclear infrastructure, defense, and national security. We further equip industry stakeholders with next-generation training and support to ensure a bright future for nuclear interests." With the addition of a blog, the website also provides forward-thinking, timely insights into nuclear development, protection, and storage, along with critical analyses of current security and defense policy. The blog is an expanding resource for legislators, commercial innovators, and students of nuclear applications alike.

https://www.prweb.com/releases/usa_nuclear_announces_new_website_to_expand_government_and_non_government_nuclear_security_and_defense_applications/prweb17114574.htm

USA plans revival of uranium sector

World Nuclear News, May 12, 2020

In an op-ed published on the Department of Energy's website, Baranwal noted that uranium production in the USA has been on a steady decline since the early 1980s as its nuclear power plant operators replaced domestic uranium production with less expensive imports. About 90% of the uranium fuel used today in US reactors is produced by other countries. Last year, the USA produced around 174,000 pounds of uranium, the lowest annual total in more than 70 years. "Our uranium miners are eager for work, the nation's only uranium conversion plant is idle due to poor market conditions, and our inability to compete with foreign state-owned enterprises (most notably from China and Russia) is not only threatening our energy security but weakening our ability to influence the peaceful uses of nuclear around the world," Baranwal wrote.

The DOE recently released its strategy for Restoring America's Competitive Nuclear Energy Advantage, which followed the Nuclear Fuel Working Group, established by President Trump. The first immediate step in this plan calls for DOE to establish a uranium reserve programme, according to which the DOE Office of Nuclear Energy (NE) would buy uranium directly from domestic mines and contract for uranium conversion services. The new stockpile is expected to support the operation of at least two US uranium mines, re-establish active conversion capabilities, and ensure a backup supply of uranium for nuclear power operators in the event of a market disruption.

https://www.world-nuclear-news.org/Articles/USA-plans-revival-of-uranium-sector

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World Nuclear News, May 12, 2020

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https://www.world-nuclear-news.org/Articles/USA-plans-revival-of-uranium-sector

ORNL developing 3D-printed nuclear microreactor

World Nuclear News. May 12, 2020

ORNL launched the Transformational Challenge Reactor (TCR) Programme in 2019 with the goal of designing, manufacturing and operating a demonstration additively manufactured microreactor by 2023. The programme leverages advances from ORNL in manufacturing, materials, nuclear science, nuclear engineering, high-performance computing, data analytics and related fields. ORNL said. TCR will introduce new, advanced materials and use integrated sensors and controls, providing a highly optimised, efficient system that reduces cost, relying on scientific advances with potential to shape a new path in reactor design, manufacturing, licensing and operation. "The nuclear industry is still constrained in thinking about the way we design, build and deploy nuclear energy technology," ORNL Director Thomas Zacharia said. "DOE launched this programme to seek a new approach to rapidly and economically develop transformational energy solutions that deliver reliable, clean energy."

The TCR programme has completed several foundational experiments including selection of a core design, and a three-month "sprint" that demonstrated the agility of the additive manufacturing technology to quickly produce a prototype reactor core. Researchers will now focus on refining the selected design and the processes that will ensure an optimal and reliable energy system. The TCR core will be advanced manufactured and housed inside a conventionally manufactured and qualified vessel made from grade 304H stainless steel. The core consists of uranium nitride coated fuel particles within an advanced manufactured silicon carbide structure. The fuel blocks are arranged within advanced manufactured grade 316L stainless steel structures and are interspersed with yttrium hydride moderator elements. The hydride moderator minimizes the amount of high-assay, low-enriched uranium required to reach criticality. The reactor system will be housed inside a vented confinement within an ORNL building. TCR will be the 14th nuclear reactor to be built at ORNL.

https://www.world-nuclear-news.org/Articles/ORNL-developing-3D-printed-nuclear-microreactor

US nuclear bombers in show of force to China and Russia

Michael Evans

The Times, May 13, 2020

America’s strategic bomber squadrons have been engaged in a co-ordinated show of force over the Indo-Pacific region and Europe to demonstrate that the US is ready to confront any aggression, even amid the coronavirus crisis.

All three types of the US air force’s long-range bombers — the B-2 Spirit stealth bomber, the B-52H Stratofortress and the B-1B Lancer — have recently been flying missions thousands of miles from their home bases. The B-2 and B-52H are designed to carry nuclear bombs and the B-1B has cruise missiles with conventional warheads.

https://www.thetimes.co.uk/article/us-nuclear-bombers-in-show-of-force-to-china-and-russia-szzqnx98l

Major component installed at Vogtle 3

World Nuclear News, May 14, 2020

The IHP, which is 48 feet (14.6 metres) high and weighs 475,000 pounds (215 tonnes) is an integral component that will eventually be used by nuclear operators to monitor and control the nuclear reaction that will occur inside the reactor vessel. Georgia Power described its installation as a "significant milestone". Georgia Power earlier this month announced the completion of open vessel testing at unit 3, which demonstrates how water flows from the key safety systems into the reactor vessel ensuring the paths are not blocked or constricted. This also prepares the unit for cold hydro testing and hot functional testing - both critical tests required ahead of initial fuel load - by confirming pumps, motors, valves, pipes and other components of the systems function as designed.

Thomas Fanning, CEO of Georgia Power parent Southern Company, said in a conference call on 30 April that cold hydro testing is planned to begin in June or July, with hot functional testing beginning in August or September. Construction of Vogtle unit 3 began in March 2013 and unit 4 in November the same year. Southern Nuclear and Georgia Power, both subsidiaries of Southern Company, took over management of the construction project in 2017 following Westinghouse's Chapter 11 bankruptcy. Vogtle 3 is scheduled to enter service by November 2021 and unit 4 by November 2022, although earlier this year Fanning told shareholders the first unit could be brought online as early as May 2021. The company has subsequently said the effects of the COVID-19 pandemic could potentially disrupt or delay construction, testing, supervisory and support activities at Vogtle 3 and 4.

https://www.world-nuclear-news.org/Articles/Major-component-installed-at-Vogtle-3

Trump envoy accuses Germany of undermining NATO's nuclear deterrent

Reuters, May 14, 2020

The U.S. ambassador in Berlin has accused Germany of undermining NATO’s nuclear deterrent, taking aim at Chancellor Angela Merkel’s junior coalition partners after some of their leaders called for nuclear disarmament. Rolf Muetzenich, parliamentary leader of the Social Democrats (SPD), called earlier this month for the withdrawal of all U.S. nuclear weapons from Germany - a view that divides his left-leaning party and is not shared by Merkel’s conservatives.

In an opinion piece for German newspaper Die Welt, Ambassador Richard Grenell wrote: “Instead of undermining the solidarity that forms the basis of NATO’s nuclear deterrence, it is now time for Germany to meet its commitments to its allies and to continuously invest in NATO’s nuclear participation.” “Germany’s political leadership, especially that of the SPD, must now make it clear the federal republic is honouring these commitments and standing by its allies,” added Grenell, who is also U.S. President Donald Trump’s acting national intelligence chief.

https://www.reuters.com/article/us-germany-usa-nato/trump-envoy-accuses-germany-of-undermining-natos-nuclear-deterrent-idUSKBN22Q265

US DOE launches advanced reactor demonstration programme

World Nuclear News, May 14, 2020

Speaking during a 'Webchat' event hosted by the OECD Nuclear Energy Agency (NEA) today, US Assistant Secretary for the Office of Nuclear Energy Rita Baranwal said the Advanced Reactor Demonstration Program (ADRP) will focus on "actual" construction and follows on from last month's release by the US Administration of the Nuclear Fuel Working Group's Strategy to Restore American Nuclear Energy Leadership, which recommends continued support for the demonstration of US advanced reactor technology. "My office has taken action on that by launching the Advanced Reactor Demonstration Program ", Baranwal said, adding that this will concentrate resources on advanced reactors that are "affordable" to build and operate. "This programme is going to require a sustained technical and financial commitment to achieve these very aggressive goals," she said.

The DOE aims to make the funding awards by the end of 2020. "What we're hoping for is that we're going to have, not a singular company, but a team of entities - developer, end-user, supply chain companies as well - involved in these proposals. It's a very exciting time," she told NEA Director General William Magwood. Applicants can receive support through three different development and demonstration pathways: advanced reactor demonstrations, which are expected to lead to a fully functional advanced nuclear reactor within seven years of the award; risk reduction for future demonstrations, which will support up to five additional teams resolving technical, operational and regulatory challenges to prepare for future demonstration opportunities; and Advanced Reactor Concepts 2020 (ARC 20), which will support innovative and diverse designs with the potential to be commercial in the mid-2030s.

https://www.world-nuclear-news.org/Articles/US-DOE-launches-advanced-reactor-demonstration-pro

Trump says US will beat out Russia and China with 'super duper missile'

Martin Pengelly

The Guardian, May 15, 2020

Unveiling the flag for his new space force in the Oval Office on Friday, Donald Trump said the US was developing a "super duper missile" to outpace military rivals including Russia and China. "We have no choice, we have to do it with the adversaries we have out there. We have, I call it the super duper missile and I heard the other night [it's] 17 times faster than what they have right now," the president said, sitting at the Resolute Desk.

"You take the fastest missile we have right now," Trump said. "You heard Russia has five times and China's working on five or six times, we have one 17 times and it's just got the go-ahead." Vladimir Putin, the Russian president, has indeed announced a hypersonic nuclear missile, meaning one that flies at five times the speed of sound (767mph) or faster.

https://www.theguardian.com/us-news/2020/may/15/super-duper-missile-us-trump-military

X-energy TRISO-X fuel to be irradiated at MIT

World Nuclear News, May 15, 2020

Irradiation of fuel is scheduled to take place later this year, the Maryland-based company said yesterday. "This research with MIT will provide confirmation of the performance and quality of our TRISO-X fuel," X-energy CEO Clay Sell said. Tri-structural isotropic - TRISO - nuclear fuel particles, used as fuel for high-temperature reactors, were first developed over 60 years ago. Each particle of fuel contains a kernel of uranium oxide/carbide, encased in carbon and ceramic layers which prevent the release of radioactivity. These are then fabricated into either graphite 'pebbles' or hexagonal graphite blocks.

X-energy's proprietary pebble-type fuel, TRISO-X, seals uranium particles in a protective coating, which the company says eliminates the meltdown risk associated with traditional nuclear plants. It has been manufacturing TRISO-X for over three years, and is, to date, the only US company actively producing TRISO fuel. The company's Vice President of Fuel Production, Pete Pappano, described the first-time irradiation testing as an "incredible milestone" for the team. Data from the project would enable licensing for the company's Xe-100 small modular reactor, he said. The 200 MWt (75 MWe) SMR will use TRISO-X fuel.

https://www.world-nuclear-news.org/Articles/X-energy-TRISO-X-fuel-to-be-irradiated-at-MIT

Europe

German energy regulator raises power reserve capacity for coming winter
Reuters, May 4, 2020

Germany’s energy regulator, the Bundesnetzagentur, on Monday raised the necessary power reserve capacity for the 2020/21 winter to 6,596 megawatts (MW), saying it needed to make up for insufficient grid expansion to plug possible gaps. A year ago, the Bonn-based authority required 5,126 MW of reserve capacity for the 2019/20 winter. The authority has to ensure there are no supply bottlenecks when demand peaks in winter, signing up power plants on standby to quickly provide electricity. It also commissions and monitors construction of transmission capacity to maintain a secure network structure as Germany abandons fossil fuels and nuclear power and switches to green energy, the supply of which can be more volatile.

“If a high wind power influx and power imports into northern Germany were to coincide with high demand and very low solar power feed-in in southern Germany, the intensive transport job from North to South would overburden the grid,” the Bundesnetzagentur said in a statement. “At the same time, a low wholesale power price would result in very high energy exports, especially into southern European neighbouring countries,” it added.

The benchmark German annual power price in the European wholesale market has fallen by a fifth from the start of the year as the coronavirus crisis sapped demand. For winter 2024/25, the authority said it would need to enlist 8,042 MW of reserve capacity. It routinely looks four years ahead to allow for longer-term planning. At that point, there will be more new grids in place which would theoretically lower reserve needs, it said. However, the figure allows for more cross-border energy trading under European Union laws to bring about a harmonised energy market in the bloc. Last year,

it defined 10,647 MW as necessary in the 2022/23 winter, shortly after Germany switches off its last nuclear reactor in 2022.

https://www.reuters.com/article/germany-powergrid-reserve/german-energy-regulator-raises-power-reserve-capacity-for-coming-winter-idUSL8N2CM468

EDF asked to lower Sizewell nuclear plant output to help balance UK grid
Susanna Twidale
Reuters, May 6, 2020

EDF Energy has been asked to temporarily reduce output at its Sizewell B nuclear plant in the east of England to help balance the grid and prevent blackouts, EDF and grid operator National Grid said on Wednesday. Energy demand has slumped across the world as countries shut industry and ask people to stay at home to help prevent the spread of the novel coronavirus, making it more difficult for power grids to balance supply and demand. "To help respond to the COVID-19 crisis, EDF has been asked by the National Grid ESO (Electricity System Operator) to consider reducing output from its Sizewell B power station in Suffolk," an EDF Energy spokesman said via email.

National Grid said offering capable plants a one-off, fixed term contract was one of a number options it was exploring to help manage the system, and confirmed it was in discussions with EDF over Sizewell B. "If utilized this approach would give additional options to our control room engineers, as well as being a more cost efficient and secure outcome for consumers too," a National Grid spokesman said via email. Industry sources said a contract requiring EDF to half output at the 1,200 megawatt Sizewell B plant for four months could cost National Grid about 50 million pounds ($62 million). Neither company would reveal financial details of a possible contract. Britain's fleet of nuclear reactors, operated by EDF Energy, the British arm of France's EDF, typically provide about 20% of its electricity. The Sizewell B plant is the youngest plant and uses different technology to the rest of them, meaning it is able to reduce capacity more easily.

https://www.reuters.com/article/us-health-coronavirus-britain-energy/edf-asked-to-lower-sizewell-nuclear-plant-output-to-help-balance-uk-grid-idUSKBN22I13D

French nuclear power generation fell 15.5% year-on-year in April
Reuters, May 6, 2020

French nuclear power generation fell 15.5% year-on-year in April to 26.9 terawatt hours (TWh) due to the impact of the coronavirus outbreak on electricity demand, utility EDF said on Wednesday. State-controlled EDF, which operates France's 57 nuclear reactors, said cumulative nuclear power generation since the start of the year added up to 128.1 TWh, down 10.7% compared with the same period last year. The fall in output is "due to a drop in demand and prolonged (nuclear reactor) outages linked in particular to the health crisis," EDF said. Electricity consumption has plunged across Europe due to shutdown measures ordered by governments to halt the spread of the virus.

EDF has said it expects its nuclear power output in France this year to fall to a record low of around 300 TWh, from an initial expectation of 375 to 390 TWh before the outbreak. The utility added that its nuclear generation in Britain fell 18.7% year-on-year in April to 3.7 TWh, while total output since January was at 15.6 TWh, down 5.3% compared with the same period in 2019. EDF's subsidiary in Britain, EDF Energy has been asked to temporarily reduce output at its Sizewell B nuclear plant in the east of England to help balance the grid and prevent blackouts, due to the fall in energy demand, EDF and grid operator National Grid said separately on Wednesday.

https://www.reuters.com/article/health-coronavirus-edf-nuclearpower/update-1-french-nuclear-power-generation-fell-15-5-year-on-year-in-april-idUSL8N2CO843

EU court adviser rejects challenge to UK aid for nuclear plant
Kate Abnett
Reuters, May 7, 2020

The European Union's top court should reject an attempt by Austria to block British state support for a nuclear power plant in southwest England, a court adviser said. Advocate General Gerard Hogan, of the EU Court of Justice, said in a non-binding opinion that the EU's top court should dismiss the Austrian government's appeal. Judges follow opinions in the majority of cases, but are not bound to do so. Austria launched a case in 2015 to try to block state support for the Hinkley Point project. A lower EU court dismissed the challenge in 2018, prompting Austria to appeal. The lower court had been "fully entitled" to dismiss Austria's challenge, Hogan said.

French utility EDF and China General Nuclear Power Corp aim to have the Hinkley Point C nuclear power station on line in 2025. Expected costs for the project have increased, with the last estimate at up to 22.5 billion pounds ($27.8 billion). The European Commission cleared British government aid for the plant in 2014, saying it did not violate EU competition rules. Vienna challenged the Commission's approval, arguing it contradicted EU policy of supporting renewable energy and the plant's environmental impact had not been properly assessed. State aid rules are designed to assess whether projects violate EU competition regulations, but not "rules pertaining to the environment", Hogan said. He added EU law gave each member state the right to choose its mix of energy sources. In particular, Austria opposed the British government's plan to support Hinkley Point C through multi-billion pound state credit guarantees, and a fixed price for electricity that is higher than market rates. Austria has no nuclear power facilities and a long history of opposing the fuel. Luxembourg had backed Austria's challenge. Alongside Britain, a handful of EU countries with existing or planned nuclear plants, including France, the Czech Republic and Poland, supported the Commission's approval of the Hinkley aid.

https://www.reuters.com/article/us-britain-nuclearpower-austria/eu-court-adviser-rejects-challenge-to-uk-aid-for-nuclear-plant-idUSKBN22J20V

France's Engie to speed up cuts to unprofitable business
Reuters, May 12, 2020

French utility Engie said on Tuesday it would accelerate plans to withdraw from some markets and leave more than 25 countries by 2021, while shrinking its client solutions division, which the coronavirus crisis has hit hard. Engie, whose operations span the globe and include nuclear and gas, posted a 3.7% fall in first-quarter revenue to 16.5 billion euros ($17.85 billion), hurt partly by unseasonably warm weather which lowered energy demand.

The novel coronavirus outbreak began to feed through to sales by the end of March as lockdowns were enforced in Europe, Engie said, adding its client solutions unit, which provides companies with heating and cooling systems for instance, was affected the most. Engie's operating income fell 2.1% on a comparable basis to 1.9 billion euros, while areas including renewable energy and nuclear performed well, it said. The group, which has yet to appoint a new chief executive after ousting former boss Isabelle Kocher earlier this year, said it would refrain from rolling out activities in some new countries and withdraw from some others. "Engie has fine-tuned its market rationalisation target

with a decision to exit over 25 countries by 2021," the company said, adding this would have little impact on operating income. Engie said it intended to "further rationalise its Client Solutions activities, exiting business with low profitability or non-core in the context of its strategy". It did not give details. The division spans a wide range of services, including electrifying public transport networks.

https://www.reuters.com/article/us-engie-results/frances-engie-to-speed-up-cuts-to-unprofitable-business-idUSKBN22O0Q8

E.ON sold ahead German nuclear power at above market prices
Reuters, May 12, 2020

German utility E.ON said on Tuesday it has sold forward 65% of its nuclear power generation in 2021 and 34% of its 2022 output at prices well above the current wholesale market, raising earnings prospects from that segment. The company has to date also sold some 86% of output in the current year from reactors at its Preussen Elektra unit, it showed in presentation slides on reporting financial results for first quarter 2020. Production in 2020 was sold at 46 euros ($49.72) per megawatt hour (MWh) after 2019's locked in price had been 33 euros.

Hedge rates of forward production volumes are tracked by wholesale market traders and analysts to assess volumes tied up with counterparties and the value of future production. As for achieved prices in the forward sales, both 2021 and 2022 were locked in at 46 euros, the slides showed.

https://www.reuters.com/article/us-eon-results-hedgerates/e-on-sold-ahead-german-nuclear-power-at-above-market-prices-idUSKBN22O0PW

Engie considering selling Endel unit amid wave of disposals: sources
Reuters, May 14, 2020

French utility Engie (ENGIE.PA) is considering selling businesses including industrial and nuclear plant maintenance specialist Endel, as it tries to recentre on its most profitable activities, according to two sources familiar with the matter. Engie, which is yet to replace ousted Chief Executive Isabelle Kocher, had already outlined plans several months ago to exit some markets and cut back in areas such as energy services. The coronavirus crisis has since hit this division particularly hard, and Engie said earlier this week it was stepping up efforts to reshape the group.

Endel's nuclear activities might however remain within Engie, the second source added. The disposals under consideration would be equivalent to between 1.2 billion and 1.8 billion euros ($1.95 billion) in revenue altogether, representing between 2% and 3% of Engie's total sales, French newspaper Les Echos reported on Wednesday. Engie, which provides electricity and gas power, is envisaging withdrawing from several countries in Africa, Europe and Asia as part of its plans to exit more than 25 markets, the first source added. Engie's board voted not to award Kocher, the only female boss of a blue-chip French company, a second mandate in February following internal disagreements over strategy and asset sales.

https://www.reuters.com/article/us-engie-strategy/engie-considering-selling-endel-unit-amid-wave-of-disposals-sources-idUSKBN22P2XG

RWE raises net debt to hedge carbon prices up to 2023
Reuters, May 14, 2020

RWE, one of Europe's biggest power generators, raised its net debt in January-March partly to lock in sales of its output over the next few years and to pay for accompanying carbon emissions permits, it said. The German utility has hard coal and brown coal plants alongside gas, nuclear and renewables generation capacity, so it needs to cover its fossil fuel output with carbon allowances to meet legal requirements and to guard against margin risks.

RWE said its net debt rose in the first quarter to 8.7 billion euros from 7 billion on Dec. 31, 2019, citing mainly timing effects of the forward sales or hedges and seasonally strong CO2 buying needs. The company said lower pension provisions offset some of the increase. RWE's presentation on its first-quarter results published on Thursday showed that more than 90% of its German nuclear and brown coal production for 2021, 2022 and 2023 was sold ahead at 32 euros ($34.57), 32 euros and 26 euros per megawatt hour (MWh) respectively for the three years. RWE's 2020 output was sold at 27 euros/MWh after carbon costs.

https://www.reuters.com/article/rwe-results-hedgerates/rwe-raises-net-debt-to-hedge-carbon-prices-up-to-2023-idUSL8N2CQ540

France's EDF reports 1% drop in first-quarter revenue as nuclear output falls
Reuters, May 14, 2020

EDF (EDF.PA) on Thursday reported a 1% drop in first-quarter revenue to 20.7 billion euros ($22.4 billion) as nuclear power output at the French state-controlled utility fell on prolonged reactor outages. "Sales were generally stable compared to the first quarter of 2019. They were supported by better price conditions in electricity in France and in the United Kingdom," EDF said in a statement. The company's shares on the Paris bourse .FCHI were up 0.5% in early trade.

EDF, which operates all of France's 57 nuclear reactors that account for around 70% of the country's electricity needs, cut its nuclear electricity generation target for the year in April due to the impact of the coronavirus outbreak. The pandemic has both curbed demand and disrupted maintenance works at its reactors.

https://www.reuters.com/article/us-edf-outlook/frances-edf-reports-1-drop-in-first-quarter-revenue-as-nuclear-output-falls-idUSKBN22Q0RA

Russia

Top Russian diplomat backs New START extension in call with Pompeo

TASS News Agency, May 6, 2020

Russian Foreign Minister Sergey Lavrov has had a phone call with US Secretary of State Mike Pompeo and supported the idea to extend the New Start nuclear arms reduction treaty, the Russian foreign ministry said in a statement on Wednesday. "Opinions were exchanged on the issue of global security. <…> Lavrov again backed extension of the New START treaty that expires in February 2021. Ways to reenergize the Russian-US dialogue on arms control and non-proliferation were reviewed, considering the factors affecting the strategic stability," the ministry noted.

In addition, the chief diplomats also discussed the coronavirus pandemic. "In the context of fighting the coronavirus pandemic, issues relating to the cooperation of the two countries in this sphere were discussed, considering the need for all members of the international community to join efforts and in

accordance with calls of the UN leadership as well as other multilateral organizations," the diplomatic agency stressed. Some other current issues were touched upon, including the UN Security Council work, cooperation prospects in the spheres of economy, counterterrorism and cyber security, the Russian ministry added.

https://tass.com/defense/1153633

Shipbuilders to deliver upgraded Borei-A sub to Russian Navy in late May, says source

TASS News Agency, May 6, 2020

The Project 955A (Borei-A) first upgraded strategic nuclear-powered submarine Knyaz Vladimir may be delivered to the Russian Navy in late May, a source in the defense industry told TASS on Wednesday. "The Sevmash shipbuilders have prepared the cruiser for its delivery. The date of its transfer is being decided. This may take place in late May," the source said.

The Russian Navy's press office declined to comment on the information provided by the source. TASS has no comment from the Sevmash Shipyard (part of the United Shipbuilding Corporation) on this score so far. The Knyaz Vladimir is the improved Project 955A strategic missile-carrying underwater cruiser, which represents the fourth generation of nuclear-powered subs built for the Russian Navy. It was floated out in November 2017. According to the data of Russia's Defense Ministry, the sub Knyaz Vladimir is less noisy and features improved maneuvering, depth and armament control systems.

https://tass.com/defense/1153517

Russia to float out new sub to carry Poseidon nuke drone in late June — source

TASS News Agency, May 7, 2020

The second submarine to serve as a basic carrier of Russia's Poseidon nuclear-capable underwater drones will be floated out approximately in late June, a defense industry source told TASS on Thursday. "The Khabarovsk [Project 09852] will be floated out in late June at the earliest. There is no exact date so far," the source said.

The Russian Navy's press service did not comment on the information. The Sevmash shipyard where the submarine is being built was not immediately available for a comment. The first basic carrier of Poseidon drones, a Project 09852 special-purpose nuclear sub, the Belgorod, was floated out on April 23, 2019 and is expected to enter service with the Russian Navy in September. The Belgorod and the Khabarovsk are expected to carry six Poseidon drones each.

https://tass.com/defense/1153699

US knocks on a closed door seeking to extend Iran arms embargo - Russia's UN envoy

TASS News Agency, May 13, 2020

The United States cannot demand the extension of arms embargo against Tehran since it is no more a party to the Iran nuclear deal, Russia's UN envoy Vasily Nebenzya told a press conference with journalists via a video link-up. "I do not see any reasons why arms embargo should be imposed on Iran," Nebenzya said. "It expires on 18 October. It was temporary. Let's call a spade a spade: it was not in fact even an embargo. It is the provision where Iran is allowed to export/import armaments on the consent of the Security Council. Of course, you may call it a de-facto embargo, because we know what would happen if Iran asked for such waiver, but technically it was not an embargo. For us it's clear, it expires on 18 October. We proceed from that fact."

The high-ranking diplomat recalled that exactly two years ago, the US "proudly announced" that it withdrew from the Joint Comprehensive Plan of Action (JCPOA) and closed the door behind. "Now they knock on that door and say "just wait a second, we forgot to do one little thing on the JCPOA. Let us back, we will do it and leave again". This is ridiculous," he said. "You know, in order to be able to use the instruments provided by JCPOA you first have to be a participant of the JCPOA. The US has not been an effective participant of the JCPOA for two years now." The New York Times reported on April 26 that Washington sought "to pressure the United Nations Security Council to extend an arms embargo on Tehran or see far more stringent sanctions reimposed on the country." Russia's Foreign Ministry said in a statement on March 3 that an extension of the arms embargo was not on the table. Under the JCPOA, which was signed between five permanent members of the UN Security Council plus Germany with Iran in 2015, Tehran will be able to purchase armaments and military equipment from foreign suppliers since October.

https://tass.com/politics/1155727

Russia's advanced nuclear-powered sub enters final stage of sea trials

TASS News Agency, May 13, 2020

The Project 955A (Borei-A) lead nuclear-powered missile-carrying strategic submarine Knyaz Vladimir has taken to the sea for final trials before it enters service with the Navy, the Northern Fleet's press office reported on Wednesday.

A source in the domestic defense industry earlier confirmed to TASS the sub's deployment to the sea. "On Tuesday evening, the cruiser set off for the White Sea from Severodvinsk for final trials," the press office said in a statement. The trials will last several days first in the surfaced and then in the submerged position, the press office specified.

https://tass.com/defense/1155965

Hydrostatic testing completed at Leningrad II-2 cooling tower

World Nuclear News, May 14, 2020

First, the open pool tank was filled to the design level of -1.35 meters and a day later to -0.3 metres from ground level. In total, 28,000 cubic meters were required to test the hydraulic concrete basin for strength and secureness. "The main purpose of the tests was to check the special characteristics of building materials and the quality of work on the construction of the pool as a whole," said Alexander Belyaev, chief engineer of the Leningrad II project.

"Throughout the entire process of hydrotesting, plant personnel conducted round-the-clock monitoring of the water level and checked for an absence of leaks in this technological element of the cooling tower. As a result, not only the tightness of the drainage basin was confirmed, but also its ability to withstand the serious loads envisaged by the project in relation to the hydraulic structure of the plant," he added. At unit 2, one evaporative cooling tower was built instead of two, as had been built for unit 1, enabling a significant reduction in capital costs, energy consumption and land use, whilst maintaining all the technological requirements and nuclear safety, Rosatom said.

https://www.world-nuclear-news.org/Articles/Hydrostatic-testing-completed-at-Leningrad-II-3-co

West Asia

Iran

Iranian warship hit by missile in training accident, killing 19 sailors
Parisa Hafezi
Reuters, May 11, 2020

One Iranian warship accidentally struck another with a missile during an exercise, killing 19 sailors and wounding 15 others, Iran's navy said on Monday. The incident took place during training in the Gulf of Oman, a sensitive waterway that connects to the Strait of Hormuz through which about a fifth of the world's oil passes. Iran regularly conducts exercises in the area. The frigate Jamaran fired at a training target released by a support ship, the Konarak. However, the support ship stayed too close to the target and was hit, state broadcaster IRIB said.

"The incident took place in the perimeter of Iran's southern Bandar-e Jask port on the Gulf of Oman during Iranian Navy drills on Sunday afternoon, in which 19 sailors were killed and 15 others were injured," state TV said, quoting the navy. Fars news agency quoted an unidentified military official as denying some Iranian media reports that the Konarak had sunk. The navy statement said investigations were undergoing regarding the cause of the incident, student news agency ISNA said.

https://www.reuters.com/article/us-iran-military-accident/iranian-warship-hit-by-missile-in-training-accident-killing-19-sailors-idUSKBN22N0H8

Iran dismisses U.S. threat to trigger return of U.N. sanctions
Reuters, May 14, 2020

Iran's Foreign Minister on Thursday dismissed as "foolish claims" U.S. threats to trigger a return of all United Nations sanctions if the U.N. Security Council does not extend an arms embargo on Tehran, state media reported. The U.S. special envoy for Iran, Brian Hook, on Wednesday publicly confirmed the strategy two weeks after an official, speaking on condition of anonymity, said that Washington had notified Britain, France and Germany of its plan.

https://www.reuters.com/article/us-iran-usa-sanctions/iran-dismisses-u-s-threat-to-trigger-return-of-u-n-sanctions-idUSKBN22Q1OG

UAE

Barakah nuclear plant 'on schedule' as measures taken on Covid-19 outbreak, says Enec CEO

Callum Paton

The National, May 7, 2020

Operations at UAE's pioneering Barakah nuclear plant are "on schedule" despite the Covid-19 outbreak, the chief executive of the Emirates Nuclear Energy Corporation has said. Speaking via video link to the Washington-based Atlantic Council, Mohammed Al Hammadi explained that, as a result of rigorous measures taken at the Barakah plant construction site, the virus had not affected the timetable for completion.

The nuclear plant, 50km southwest of Ruwais in Al Dhafra region, is the first such facility in the Arab world. "Today we are on schedule," Mr Al Hammadi said. "We are continuing with our plan and we will keep safety as the overriding priority … the current impact we have right now did not derail us from our plans. "We are planning to go critical very soon. In a couple of weeks or month or so from now. We are targeting to get the units operational and start putting power to the grid before the end of the year."

https://www.thenational.ae/uae/barakah-nuclear-plant-on-schedule-as-measures-taken-on-covid-19-outbreak-says-enec-ceo-1.1016237

East Asia

North Korea

After rumours about health, North Korea state media report Kim Jong Un appearance
Heekyong Yang, Jack Kim
Reuters, May 2, 2020

After weeks of intense speculation about the health of North Korean leader Kim Jong Un, the country's official media said he had attended the completion of a fertiliser plant, the first report of his appearance since April 11. In a report on Saturday, the Korean Central News Agency (KCNA) said Kim cut a ribbon at the ceremony on Friday and those attending the event "burst into thunderous cheers of 'hurrah!' for the Supreme Leader..."

U.S. President Donald Trump, who met Kim three times in 2018 and 2019 in unprecedented but unsuccessful personal attempts to persuade him to give up his nuclear weapons, tweeted on Saturday: "I, for one, am glad to see he is back, and well!"

https://www.reuters.com/article/us-north-korea-leader/after-rumours-about-health-north-korea-state-media-report-kim-jong-un-appearance-idUSKBN22D6DD

Trump hails Kim reappearance, but North Korea denuclearization prospects bleak
David Brunnstrom, Matt Spetalnick

Reuters, May 3, 2020

U.S. President Donald Trump on Saturday welcomed the reemergence of North Korea's Kim Jong Un after weeks of speculation about his health, but prospects for the U.S. efforts to persuade Pyongyang to denuclearize appear as bleak as ever. North Korean media said Kim cut a ribbon at a ceremony on Friday to mark the completion of a fertilizer plant. It had not reported on Kim's whereabouts since he presided over a meeting on April 11, provoking speculation that he was seriously ill and raising concerns about instability in his nuclear-armed country that could affect other North Asian countries and the United States.

Kim was seen in photographs smiling and talking to aides at the ceremony and also touring the plant. The authenticity of the photos could not be verified. A U.S. government source familiar with intelligence reporting said Washington strongly believes Kim is alive, but has not been able to confirm the photos were taken on Friday, or explain why he had not been seen for weeks.

https://www.reuters.com/article/us-northkorea-kim-trump/trump-hails-kim-reappearance-but-north-korea-denuclearization-prospects-bleak-idUSKBN22F00D

Shots fired by North Korea 'accidental': Pompeo
Reuters, May 3, 2020

Shots fired by North Korea across its border with South Korea were likely "accidental," U.S. Secretary of State Mike Pompeo said on Sunday as speculation continues to swirl about the health of North Korean leader Kim Jong Un. North and South Korea on Saturday exchanged gunfire around a rural guard post, raising tension a day after North Korean state media showed Kim visiting a factory, the first report of him making a public appearance since April 11. South Korea responded to shots fired from across the DMZ but no casualties were reported. "We think those are accidental. South Koreans did return fire. So far as we can tell, there was no loss of life on either side," Pompeo said on ABC This Week.

https://www.reuters.com/article/us-northkorea-southkorea-usa-pompeo/shots-fired-by-north-korea-accidental-pompeo-idUSKBN22F0LV

Status quo likely in N. Korea nuclear talks: report
Choi Si-young
Korea Herald, May 5, 2020

Days after North Korean leader Kim Jong-un resurfaced in public, ending an absence that had triggered health rumors, the Wall Street Journal said Monday that Pyongyang's denuclearization talks are unlikely to see progress, at least not ahead of the US presidential election in November. Kim's return reaffirmed the status quo, meaning the communist country would not reorient its uncompromising approach to nuclear talks or change its pattern of sporadic weapons tests, according to the WSJ. "The age of talking is kind of over," Olivia Enos, a senior policy analyst at the Heritage Foundation's Asian Studies Center in Washington told the WSJ. "It's pretty unlikely there will be any summit sooner than November."

As the US has reported the world's largest number of novel coronavirus infections, President Trump is preoccupied with prioritizing the domestic agenda to counter the global respiratory disease, while taking care of his reelection campaign, leaving little incentive for fresh engagement with Kim. The

bilateral nuclear talks have been in limbo since October last year when Washington and Pyongyang failed to narrow their differences over prioritizing steps to dismantling the North's nuclear arsenal.

http://www.koreaherald.com/view.php?ud=20200505000191&ACE_SEARCH=1

North Korea views nuclear program as essential, but may give up 'some' capabilities: US intel chief nominee
John Ratcliffe
Korea Times, May 6, 2020

North Korea continues to view its nuclear program as "essential" to the protection of its regime, but may be willing to give up "some" nuclear and missile capabilities in exchange for sanctions relief and other gains, the nominee to be U.S. director of national intelligence said. John Ratcliffe's assessment suggests that North Korea is unlikely to completely dismantle its nuclear and ballistic missile programs as the U.S. has insisted North Korea agreed to do during the first summit between President Donald Trump and North Korean leader Kim Jong-un in June 2018. "Based on what I have seen as a member of HPSCI and on briefings, I believe that North Korea continues to view nuclear weapons as essential to protect the regime from military action and to gain standing in the international community," Ratcliffe wrote in response to questions from the Senate Select Committee on Intelligence ahead of his nomination hearing Tuesday.

"The North Korean regime's continued possession of nuclear weapons and pursuit of systems capable of delivering them remains deeply concerning," Ratcliffe wrote in a separate statement. "The threat these weapons pose to the United States and our allies in the region cannot be overstated. We must remain focused on this threat and ensure policymakers have the information they need." During the hearing, Ratcliffe was asked if he believes there has been progress in reversing North Korea's nuclear development.

http://www.koreatimes.co.kr/www/nation/2020/05/103_289048.html

Facility near Pyongyang airport linked to North Korea's missile programme, U.S. think-tank says
Sangmi Cha, Josh Smith
Reuters, May 6, 2020

A new facility near Pyongyang International Airport is almost certainly linked to North Korea's expanding ballistic missile programme, according to a report from a Washington-based think-tank. The Center for Strategic and International Studies (CSIS) cited commercial satellite imagery it says shows the facility and a nearby underground structure have the capacity to accommodate North Korea's largest intercontinental ballistic missiles (ICBMs) that experts believe are able to strike anywhere in the United States.

The facility has been under construction since 2016, and includes a number of notable features, including an unusually large covered rail terminal and buildings that are linked by drive-through access, according to the CSIS report, published on Tuesday. The facility is also relatively close to ballistic missile component manufacturing plants in the Pyongyang area. "Taken as a whole, these characteristics suggest that this facility is likely designed to support ballistic missile operations," the report said, calling it the Sil-li Ballistic Missile Support Facility. The North Korean embassy in Beijing could not immediately be reached for comment on the report. When asked about the report at a regular briefing in Seoul on Wednesday, a spokesman for South Korea's Unification Ministry said

it would be inappropriate to comment. Negotiations aimed at dismantling North Korea's nuclear and missile programmes have been at a standstill after working-level meetings with the United States collapsed last year.

https://www.reuters.com/article/us-northkorea-missiles/facility-near-pyongyang-airport-linked-to-north-koreas-missile-programme-u-s-think-tank-says-idUSKBN22I0BQ

N. Korea estimated to have spent $620m on nukes in 2019: report
Choi Si-young
Korea Herald, May 14, 2020

North Korea is estimated to have spent $620 million on its nuclear weapons program in 2019, the International Campaign to Abolish Nuclear Weapons said Wednesday in its latest annual report on nuclear spending -- about 6 percent of its defense budget, which accounts for roughly one-third of its gross national income.

The figures came from two previous estimates of the reclusive country's military spending based on South Korean and international data. In 2009 the North is thought to have spent $8.77 billion, about 35 percent of its gross national income at that time. In 2011, about 6 percent of its military spending seemed to have gone to its nuclear weapons program. Given the expenditure trajectory, the ICAN report projected that $10.2 billion, about 35 percent of the country's reported GNI of $29.2 billion in 2018, would be its defense budget, and 6 percent of that, about $620 million, would be Pyongyang's nuclear expenditure in 2019. That means the North spent $1,180 every minute on nuclear weapons last year. The communist country is believed to have 35 nuclear weapons, according to the report.

http://www.koreaherald.com/view.php?ud=20200514000780&ACE_SEARCH=1

South Korea

Nuclear safety watchdog to enforce oversight to prevent radiation accidents

Yonhap

Korea Herald, May 15, 2020

South Korea's nuclear safety watchdog said Friday that it will enforce more stringent personnel training and material handling rules to better guard against potential radiation accidents. The Nuclear Safety and Security Commission said it has decided to revise the existing nuclear safety act in the wake of the accident that occurred at Seoul Semiconductor in July 2019.The accident at the light emitting diode (LED) manufacturing company involved inadequately trained subcontract workers who disconnected safety systems on an industrial X-ray machine.

A total of seven people handled the equipment that was designed to find defects in LEDs, which exposed them to potentially harmful radiation. A probe found that workers were not informed about the dangers of their actions, with other safety-related shortcomings also found. No workers died, but a few showed signs of radiation poisoning. The commission said anyone handling radioactive equipment will be required to take mandatory annual safety training lessons instead of being taught just once. Front-line workers will be banned from tampering with safety systems, with manufacturers required to put clearly readable instructions and warnings that can prevent people from being

accidentally exposed to radiation. The change will go into effect in 2021 after going through due administrative processes.

http://www.koreaherald.com/view.php?ud=20200515000751&ACE_SEARCH=1

Misc

India, Pakistan 'nuclear purchase networks larger than thought'

Aljazeera, May 1, 2020

Hundreds of foreign companies are actively procuring components for India and Pakistan's nuclear programmes, taking advantage of gaps in the global regulation of the industry, according to a report by a US-based research group. Using open-source data, the nonprofit Centre For Advance Defense Studies (C4ADS) report provides one of the most comprehensive overviews of networks supplying the rivals, in a region regarded as one of the world's most dangerous nuclear flashpoints.

"India and Pakistan are taking advantage of gaps in global non-proliferation regimes and export controls to get what they need," said Jack Margolin, a C4ADS analyst and co-author of the report. It is seldom possible to determine whether individual transactions are illegal by using publicly available data, Margolin said, and the report does not suggest that companies mentioned broke national or international laws or regulations.

https://www.aljazeera.com/news/2020/05/india-pakistan-nuclear-purchase-networks-larger-thought-200501072211563.html

Uzbekistan plans route to cleaner electricity mix

World Nuclear News, May 6, 2020

The Central Asian country became a member of the International Atomic Energy Agency as long ago as 1994, has 50 years of experience in nuclear research and is one of the world's biggest producers of uranium. Despite its existing expertise in nuclear energy, Uzbekistan depends almost entirely on fossil fuels. About 86% of its electricity comes from burning gas, coal and oil, while the remainder comes from hydropower. It now has plans to build its first nuclear power plant, to help it keep pace with rising electricity demand and to cut its CO2 emissions. According to the Concept Note, Uzbekistan's currently available generating capacity totals 12.9 GWe, which comprises 11 GWe of fossil fuel-powered generation (84.8%) and 1.85 GWe (14.3%) of hydro power. It has 11 fossil fuel power plants and 42 hydro power plants.

Between 2012 and 2019, its power generation rose by 2.6% each year on average, but this increase did not keep pace with demand and electricity shortages averaged 9.4% of consumption. Demand is expected to increase by about 6-7% each year up to 2030, when it is forecast to reach 120.8 terawatt hours, which is 1.9 times more than its level in 2018. The strategy aims to achieve an installed generating capacity of 29.2 GWe after the decommissioning of obsolete assets (5.9 GWe). This includes: 13.4 GWe of natural gas-fired power capacity (45%); 5 GWe of solar PV (17.3%) - including 1 GWe with power storage systems; 3.8 GWe of hydro power capacity (13.1%); 3 GWe

(10.4%) of wind power; 2.4 GWe of nuclear power (8.3%); and 1.7 GWe of coal-fired capacity (5.9%).

https://www.world-nuclear-news.org/Articles/Uzbekistan-plans-route-to-cleaner-electricity-mix

Viewpoint: Regulators are adapting to an unprecedented challenge

World Nuclear News, May 11, 2020

"Since the outbreak of the novel coronavirus (COVID-19) in December 2019, and the World Health Organisation declared it a pandemic in March, it has triggered shock waves across the globe, locking down over 190 countries and affecting every-day life. The world is experiencing unprecedented challenges. The pandemic has profoundly disrupted businesses, trade, education, industries, investments and other sectors. The International Monetary Fund estimates the world economy loss to be around USD9 trillion in 2020-2021. Multilateral cooperation is needed more than ever to contain the pandemic and mitigate its far-reaching consequences. The nuclear industry is no exception. Before I elaborate on the impact on the nuclear industry and propose solutions, it is important to mention the essential role of nuclear energy in producing electricity that is needed to support healthcare facilities to address patient needs and to help first responders in their efforts to curb the spread of the virus. There are 450 nuclear power plants in operation globally, producing roughly 10% of global electricity and 53 others under construction in 19 countries.

Since the outbreak started, governments and international organisations around the world have taken precautionary measures to mitigate its impact. Many nuclear power plant operators and regulators have been affected by the current measures, leading to a drop of 10-20% in electricity generation, according to World Nuclear Association. In many countries, nuclear employees have been identified as among the key workers that are essential to maintaining important infrastructure. Some nuclear power plant operators have been taking various actions to protect their workforce and implementing business continuity plans. Activities on construction sites are being reduced or stopped, and new working practices introduced. In the UK, staff numbers have been reduced by more than half at the Hinkley Point C nuclear plant, which is under construction. In China, work was halted on some reactors under construction in response to the pandemic. As work gradually resumes, countermeasures are being introduced for the employees who are returning on site. In the USA, Duke Energy, which operates 11 nuclear reactors, is being impacted by a staff shortage and has adopted actions such screening measures at reactors as well as working remotely.

https://www.world-nuclear-news.org/Articles/Viewpoint-Regulators-adapt-to-an-unprecedented-cha

Op-Ed

India

From Fukushima to Vizag gas leak, NDRF's CBRN teams lead the way in disaster response

Namrata Biji Ahuja

The Week, May 7, 2020

The National Disaster Response Force (NDRF) in Pune has decided to airlift a team of five experts specialising in handling chemical, biological, nuclear and radiological disasters from its fifth battalion to Visakhapatnam, where a gas leak has claimed lives of 11 persons so far, left around two dozen critical and more than a thousand affected.

Villagers living within the 4-km radius of LG Polymers industry at R.R. Venkatapuram have been evacuated and the entire area is being sanitised by the disaster response forces. A police investigation has been launched to probe how the leak took place and determine the quantity of the gas leakage resulting in the chemical disaster. The NDRF specialists are being flown in after Prime Minister Narendra Modi, chairman of the National Disaster Management Authority(NDMA)--the apex disaster management decision-making body in the country--asked the NDRF to pull in resources from across the country to manage the grave threat arising out of the leakage of the gas believed to be synthetic chemical styrene, which can cause acute respiratory disorders, brain damage and skin infections depending on the level of exposure.

https://www.theweek.in/news/india/2020/05/07/from-fukushima-to-vizag-gas-leak-ndrfs-cbrn-teams-lead-the-way-in-disaster-response.html

Why Pakistan's proxy war will now intensify

Shalini Chawla

The Tribune, May 9, 2020

The threat of a nuclear war has also been repeatedly highlighted by Pakistan to attract the much-desired international attention on Kashmir in the last one year. Nuclear weapons are perceived as providing a foolproof guarantee of its sovereignty and survivability against India. After the acquisition of nuclear weapons (in 1987), Pakistan is more confident of its strategy of 'offensive-defence'. Nuclear weapons have been used as an umbrella by the Pakistani leadership to pursue terrorism as a foreign policy tool. The belief in the nuclear weapons has grown with its adoption of the 'first use' doctrine and, projection of a low nuclear threshold. The Balakot strikes did challenge Islamabad's nuclear posture to some extent.

It is pertinent to ask how this strategy towards India will evolve in the coming time. The Pakistan army has been most confident of the sub-conventional or covert war dimension of its strategy and will continue its strong reliance on that.

https://www.tribuneindia.com/news/comment/why-pakistans-proxy-war-will-now-intensify-82404

China

China needs to increase its nuclear warheads to 1,000
Hu Xijin
Global Times, May 8, 2020

China needs to expand the number of its nuclear warheads to 1,000 in a relatively short time. It needs to have at least 100 Dongfeng-41 strategic missiles. We are a peace-loving nation and have committed to never being the first to use nuclear weapons, but we need a larger nuclear arsenal to curb US strategic ambitions and impulses toward China. Maybe we have to deal with challenges with stronger determination in the near future, which requires the support of the Dongfeng and Julang missiles. Don't be naïve. Don't assume that nuclear warheads are useless.

In fact, they are being used every day as a deterrent to shape the attitudes of US elites toward China. Some Chinese experts say we don't need more nuclear weapons, I think they are as naïve as children. Some people may call me a"war monger"because I want the country to have more nuclear warheads. They should instead give this label to US politicians who are openly hostile to China. I always hope China and the US can get along with each other, but peaceful coexistence between the two countries is not a thing that can be begged for; it's shaped by strategic tools. This is particularly true as we are facing an increasingly irrational US, which only believes in strength. We don't have much time debating the need for increased nuclear warheads, we just need to accelerate the steps that make it happen.

http://www.globaltimes.cn/content/1187766.shtml

To safeguard national security, it is time for China to build up nuclear deterrent
Hu Xijin
Global Times, May 9, 2020

From China's current standpoint, the nuclear deterrence this country needs today is of a different magnitude from what was required in the past. China needs to possess the real power to prevent the US politicians from gambling with its nuclear armament and harming China. To clarify it, if the US initiates a nuclear war at China, it must not have any chance of winning -- that's the kind of nuclear deterrent China must secure. In the event of a serious military confrontation between China and the US in the Taiwan Straits or the South China Sea, the first shot fired by the two sides will immediately remind people of the comparison of nuclear power between them. It is ultimately the nuclear arsenal that will inspire either side not to retreat. China now has far fewer nuclear weapons than the US.

The Chinese experts who claim China does not need a bigger depot of nuclear weapons should think about this: Since President Donald Trump took office, which country is the target of US' sharply increased nuclear arsenal investment? When Washington is getting itself increasingly prepared, how could China just sit back and take no action at all? I am not a warmonger but a staunch peace lover. I firmly oppose nuclear war as well as conventional war. However, a country is unable to beg for peace. Everybody knows that nuclear weapons should never be used in reality. But nuclear arsenal is not only military weaponry, but also the cornerstone of American politics and psychology. China is committed not to be the first to launch nuclear weapons, and it will never threaten non-nuclear countries with its nuclear arsenal. However, if China's nuclear deterrence is comparatively weakened, China's national interests and national security will be harmed. In conclusion, I would like to say that at a time when China is considered as the biggest strategic competitor of the US, if China continues to adhere to the US definition of nuclear deterrence to guide our actions, it would bring us a tragedy.

http://www.globaltimes.cn/content/1187841.shtml

China ‘won’t win more respect’ if it expands nuclear arsenal following calls from national media, analyst says
Liu Zhen

South China Morning Post, May 11, 2020

According to Zhao Tong, a senior fellow in the nuclear policy programme at the Carnegie- Tsinghua Centre for Global Policy in Beijing, the argument made by Hu and others for more warheads was not convincing. He said rising tensions with the US did not justify stockpiling more nuclear weapons, and that the country's strategy was based on a doomsday scenario. Although China never talks about its tactics, we all know that the PLA does have shorter range nuclear-capable missiles Zhao Tong, senior fellow at the Carnegie-Tsinghua Centre for Global Policy in Beijing "China's nuclear capability was not designed for a good relationship – thus a bad relationship [with the US] makes no difference," Zhao said. "Concerns about national security in a new international environment are understandable, but in fact they are unfounded," he added.

One argument from the hawkish voices in China is that it could be at a disadvantage in the event of a conflict because its nuclear arms were seen as strategic deterrence, while the US had tactical weapons. But Zhao said the Chinese military would have plans and the capacity to deal with a regional conflict and to manage any escalation. China dismisses US claims it carried out a nuclear test as 'a distortion of the facts' "Although China never talks about its tactics, we all know that the PLA does have shorter range nuclear-capable missiles," Zhao said. "Beijing may have given the impression that China would retaliate [against any nuclear attack] with a full-on nuclear war, but this is more about showing its determination – which is part of deterrence." After China detonated its first atomic bomb in 1964, the country declared that it would never use nuclear weapons unless it was being attacked with them. Chinese navy video shows nuclear sub launching JL-2 ballistic missiles during drill The government in a defence white paper last year reiterated its commitment to "not using or threatening to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones unconditionally". It said: "China advocates the ultimate complete prohibition and thorough destruction of nuclear weapons. China does not engage in any nuclear arms race with any other country and keeps its nuclear capabilities at the minimum level required for national security." Zhao said if Beijing expanded its nuclear arsenal as other major powers reduced theirs it may be accused of breaking its promises and sabotaging international non-proliferation and arms control efforts – and that could seriously harm China's credibility and national interests. "Building up a large nuclear arsenal might make a country feel more fearsome, but it won't win more respect," he said, adding that such a move would not help Beijing's global leadership ambitions.

"For generations, Chinese leaders have pledged that China would never seek hegemony," he said. "This will be an indicator of whether China is keeping its word." Asked about the latest call to add to the stockpile on Friday, foreign ministry spokeswoman Hua Chunying said it was Hu's "personal view" and that Beijing's policy on nuclear arms control was consistent. "China has always followed the principle of 'no first use' of nuclear weapons. We pursue a very responsible and restrained policy," Hua said at a press briefing in Beijing. She did not comment on China's nuclear warheads, but said the country with the biggest arsenal should "further reduce its stocks drastically".

https://www.scmp.com/news/china/military/article/3083897/china-wont-win-more-respect-if-it-answers-calls-expand-nuclear

An elaboration of my advocacy for why China needs more nuclear deterrence
Hu Xijin
Global Times, May 12, 2020

First, to advocate that China increase the number of nuclear weapons is itself anti-peace. Some People holding this view are idealistic and have a complete aversion to nuclear weapons. Ofcourse, it cannot be ruled out that others, whose positions and feelings are not in line with China's national security interests will stand against it. In addition, some people say that the money for building nuclear weapons should be used to improve people's livelihood and alleviate poverty. I think it's difficult to talk to them. Just let them vent their emotion. Second, the number of nuclear weapons China needs to keep must be strictly calculated. My advocacy is not based on professional knowledge. I am not an expert in this area. But it is too narrow to think that only arms control experts can talk about nuclear weapons. The game between China and the US is a matter between two big societies. Nuclear deterrence should shape not only the attitude of the other side's military, but also the psychology of the other side's political, economic and opinion circles, and the national will of the other side as a whole. I am no less knowledgeable about the will of the state than an arms control expert. I mean, obviously, I have a right to participate in this discussion.

Third, China's nuclear deterrent is an ambiguous strategy and I should not spell out how many nuclear weapons China needs. In fact, over 1,000 nuclear warheads and at least 100 DF-41 ICBMs that I mentioned are not exact number, but the concept of magnitude. There are both people who agree and disagree with me, and China's ambiguous strategy of nuclear deterrence has not become "clear" because of my post. China is already defined by the US as a major strategic competitor. If the US continues to believe with certainty that China has only a few hundred nuclear warheads, it will be dangerous for China. China does not need to engage in an arms race with the US, but as Washington's strategic will to crush Beijing grows, so must our nuclear deterrence. Whatever calculation model is used to figure out how many nuclear warheads China needs, this common-sense logic needs to be the basis of all of them. Fourth, even if China wants to expand its nuclear arsenal, it should just do it and say nothing.

China should not make a big noise about it, and I agree. China could quietly increase nuclear warheads in certain phases, but I objected doing that for a long time. Nuclear weapons are for deterrence. If they're completely concealed, what do you need them for? At the Tiananmen military parade, the strategic missile part is the one that attracts the most attention every time, and that is what it shows to the outside world. Finally, I would like to say that my gut feeling is that China will increase its nuclear warheads, and I believe this is also the gut feeling of many people. Because China actually has no choice.

http://www.globaltimes.cn/content/1188101.shtml

Pakistan

Is Pakistan Nothing More than a Colony of China?

Michael Rubin

National Interest Blog, May 5, 2020

Pakistanis may soon die en masse for China’s interests, and the Pakistani government may allow it to happen. At issue is the nature of how Pakistan’s leaders have shifted their alliance partners from the United States to China.

That the U.S.-Pakistan relationship has plummeted in recent years should not surprise. Pakistan was long an American Cold War ally but it was a partnership of last resort for both countries. President

Harry S. Truman had initially sought an alliance with India. India was not only a democracy, but it also was home to the world's second-largest population, and its ability to dominate the Indian Ocean made it a strategic prize. Indian prime minister Jawaharlal Nehru, rebuffed him, preferring instead to seek non-alignment. Pakistan had little choice but to work with the United States: To join the Non-Aligned Movement was to subordinate itself to India. Because the Non-Aligned Movement leaned toward the Soviet sphere of influence, Pakistan could also not trust Moscow to protect its interests vis-à-vis India, as Moscow would always side with Delhi for reasons of realpolitik.

https://nationalinterest.org/blog/middle-east-watch/pakistan-nothing-more-colony-china-151106

USA

Can a Broke America Fight a Cold War With China?

Hal Brands

Bloomberg, May 6, 2020

America seems to be on the verge of declaring cold war on China, while simultaneously weakening its own ability to wage such a conflict. Across the ideological spectrum, U.S. hostility to China has surged just as financial fallout of the pandemic threatens to harm the U.S. defense budget for years to come. The U.S. may thus be entering a period like the beginning of the original Cold War, when it decided to confront the Soviet Union on a shoestring. The U.S. ultimately won that Cold War, of course, but that analogy should be less comforting than it first seems because it reminds us that a cash-strapped approach to competition can be an extremely risky one.

For several years, American national security elites have mostly called for a more competitive strategy toward China, while the American people have not been so certain. Now the coronavirus has convinced many Americans that the Chinese government poses not just some nebulous threat to the U.S.-led international order, but a direct danger to their prosperity and well-being. Overwhelming majorities of Republicans and Democrats now favor a China policy as tough as or tougher than the Donald Trump administration's current stance. With an eye to November, Trump and presumptive Democratic candidate Joe Biden are competing over who is the bigger China hawk. As economic decoupling accelerates, and rhetoric and policies harden on both sides, the U.S.-China cold war that pundits have been predicting may actually be unfolding.

https://www.bloomberg.com/opinion/articles/2020-05-05/coronavirus-can-a-broke-u-s-fight-a-cold-war-with-china

America Really Wanted A Nuclear-Powered Fighter (Flying Chernobyl, Anyone?)

Steve Weintz

National Interest Blog, May 10, 2020

Looking back a half century to an era of greater faith in nuclear energy, it's easy to shake one's head in wonder. What were they thinking? Surely crashes, combat and carelessness were going to keep it

all from ending well. Ah, the Atomic Age, when nuclear energy seemed the ticket to a future of limitless possibilities. For a generation after 1945 the United States explored all kinds of nuclear propulsion concepts. Some, like naval power plants for subs and ships, proved both revolutionary and effective. Others proved possible to develop but impractical to pursue.

Of these concepts the nuclear-powered aircraft now seems the most fanciful, but billions of dollars and years of top-flight research sunk into the Aircraft Nuclear Propulsion (ANP) program chased the idea before its demise. Between the end of World War II and the dawn of Camelot American engineers figured out how to fit a reactor in an airplane and make it generate thrust without frying the crew. American leaders couldn't figure out how to pay for it or why they needed it.

https://nationalinterest.org/blog/america-really-wanted-nuclear-powered-fighter-flying-chernobyl-anyone-152496

Can Pompeo Force the UN To Punish Iran—Or Will Russia Stop Him?

Matthew Petti

National Interest Blog, May 14, 2020

State Department official Brian Hook wrote this week that the United States is "prepared to exercise all legally available options" to force the United Nations to extend its arms embargo against Iran, a day after Russia's UN ambassador called the Trump administration's plan "ridiculous." The UN Security Council agreed to gradually lift sanctions on Iran as part of the JCPOA, a 2015 deal between Iran and six world powers regulating the Iranian nuclear program. But any "participating member" of the deal can automatically snap back sanctions in response to Iranian misbehavior—and the Trump administration plans to invoke this power within a few months.

Hook, who oversees Iranian affairs, wrote in the Wall Street Journal on Wednesday that the Trump administration has "drafted a resolution" to extend the UN arms embargo on Iran and will trigger snapback if it does not pass. He cited a recent letter signed by a majority of Congress asking the Trump administration to stop the arms embargo from expiring in October—although several signatories have made clear that they do not support snapback.

https://nationalinterest.org/blog/skeptics/can-pompeo-force-un-punish-iran%E2%80%94or-will-russia-stop-him-154096

This Old U.S. Navy Nuclear Powered Attack Submarine Is Getting Overhauled

Peter Suciu

National Interest Blog, May 14, 2020

The U.S. Navy's Los Angeles-class nuclear-powered attack submarine USS Boise (SSN 764) will be out of service for the foreseeable future as the submarine undergoes a multi-year engineered overhaul (EOH). The Boise moved from Naval Station Norfolk to Huntington Ingall Industries' Newport News Shipbuilding division in New Port News, Virginia earlier this month. The vessel will now commence

pre-maintenance smart start activities in preparation for the EOH, which is a major multi-year overhaul that is conducted near the mid-point of a submarine's service life. Necessary repairs, maintenance and modernization will be performed on the boat, and these will certify the submarine for unrestricted operations and further ensure that it is operating at full technical capacity and mission capability.

Boise's maintenance is also long overdue, and the submarine had been sitting in Norfolk as it was not dive certified since early 2017. The submarine had been awaiting maintenance but due to congestion and delays in the Navy shipyards, it was scheduled to receive maintenance at a private shipyard in 2019 but was delayed because of workforce capacity.

https://nationalinterest.org/blog/buzz/old-us-navy-nuclear-powered-attack-submarine-getting-overhauled-154021

Russia

Why Warlike One-Upmanship Works to Russia's Benefit

James Holmes

National Interest Blog, May 3, 2020

Winston Churchill's truism that Russia is "a riddle wrapped in a mystery inside an enigma" remains as acute as it was when he articulated it during an October 1939 BBC radio address. It verges on impossible to forecast what Moscow will do tactically. What it will do strategically, however, is more intelligible and thus more predictable.

Perhaps, added the future prime minister, "there is a key" to the riddle—namely "Russian national interest." Seeing Nazi Germany overrun southeastern Europe or the Black Sea basin "would be contrary to the historic life-interests of Russia." He delicately avoided mentioning that the Soviet Union and Germany were fresh off conquering and partitioning Poland under a secret pact, doing so the month before Churchill took to the airwaves. Had he included the invasion in his catalog of Russian interests, he would have seen that it made perfect sense to Soviet leaders to seek a strategic buffer in Poland. It advanced the national interest as the Soviets reckoned it.

https://nationalinterest.org/feature/why-warlike-one-upmanship-works-russias-benefit-149991

Russia Doesn't Need Hypersonic ICBMs To Beat U.S. Defenses (So What Are They Good For?)

Michael Peck

National Interest Blog, May 5, 2020

America's missile defense program is currently focused only on stopping a few ICBMs from North Korea – and repeated test failures make even that goal questionable. With 528 Russian land- and submarine-based ICBMs, there is no present or projected missile defense technology that will guarantee an almost 100 percent interception rate, which is the only acceptable threshold for defense

against thermonuclear-armed missiles. Russia's Avangard hypersonic ICBM system is now operational.

Russian state media sounded a triumphal tone in the December 27th announcement that the first Avangards are now ready for launch, even specifying the exact hour of combat readiness for the nuclear-armed hypersonic glider. "The Avangard strategic missile system has been put on combat duty at 10 a.m. today," Defense Minister Sergei Shoigu told President Vladimir Putin. The weapon was deployed with a missile division in the Orenburg region 900 miles southeast of Moscow.

https://nationalinterest.org/blog/buzz/russia-doesnt-need-hypersonic-icbms-beat-us-defenses-so-what-are-they-good-150796

Dead Hand: Russia's Scary Plan to Counter Attack After a U.S. Nuclear First Strike

Caleb Larson

National Interest Blog, May 7, 2020

The 1970s were some of the lowest years of Cold War for the United States. In that decade, the Vietnam War divided the American public who, dazed and confused from the long, grinding war cried for peace at any price. The Soviet Union was leading the nuclear arms race and appeared strong. But then the Reagan Administration entered office with a bold, if risky plan for winning the Cold War. In Regan's America, the United States would not purchase its security through surrender—the American retreat was over and accommodation had no place in the United States' foreign policy.

This policy shift was intended to convince the Soviet Union that the United States was not afraid of nuclear war by expressing a willingness to strike the USSR, and it worked. Reagan's rhetoric, and real or proposed military advancements like the Star Wars plan—a space-based system of weapons that could shoot down Soviet missiles—seriously worried Soviet leadership. If the United States struck the USSR first and had the ability to shoot down Soviet retaliatory missiles then the U.S. could not only initiate a nuclear war, but also survive it.

https://nationalinterest.org/blog/buzz/dead-hand-russias-scary-plan-counter-attack-after-us-nuclear-first-strike-151776

Russia's Strategy of Reconquering the Arctic

Patricia Schouker

National Interest Blog, May 8, 2020

While the COVID-19 pandemic has of late garnered most of the world's attention, in the Far North, Russia has one ambition: "to reconquer the Arctic." The Arctic is not the new geopolitical pivot point of the twenty-first century, but it will be one of the balance shifters in the global equilibrium of power. Russian president Vladimir Putin promulgated in early March the "Basic Principles of Russian Federation State Policy in the Arctic in 2035." The new policy document outlines Russia's

Arctic interests, goals and implementation mechanisms over the next fifteen years. Russia continues to be interested in cooperating in the Arctic region to advance its regional leadership and economic agenda. The policy calls for a strong militarization of the region which will only happen through substantial investments, which comes at the expense of its relations with Western countries. It appears that Russia plans to continue a campaign of harsh rhetoric regarding security challenges in the Arctic region, while also boosting its military capabilities.

The Arctic remains a stronghold of Russian sovereignty. In 2021, the Russian Federation will take over the presidency of the Arctic Council for a period of two years. This presidency will be crucial for Russia's strategy of resubjugating, though not reintegrating the international community amidst the context of deteriorating relations with the West. The international situation affords Russia time to concentrate on domestic reforms and allow Putin to focus on restoring Russia's self-defined rightful role abroad. Moscow's Arctic strategy has three objectives. First the region represents a place for Russia to reaffirm its prestige and its status as a great power, emphasizing dialogue and international cooperation rather than confrontation. Secondly, for its own security, Russia wants to reaffirm its territorial sovereignty by securing the transport routes while preparing for potential threats in the high seas or on the continental. Finally, Russia wants to revive the economy in the Far North, which represents 11 percent of its GDP.

https://nationalinterest.org/blog/buzz/russia%E2%80%99s-strategy-reconquering-arctic-152681

Steel Tomb: The Worst Russian Submarine Disasters of All Time

Peter Suciu

National Interest Blog, May 12, 2020

Last year 14 Russian sailors were killed when a fire broke out on a secret Russian submarine. The boat was identified as Losharik (AS-12), a nuclear-powered submarine that is widely believed to be a key asset for the Russian Main Directorate of Deep-Sea Research, also known as GUGI. "On July 1, 14 submariners—sailors—died in Russian territorial waters as a result of inhaling combustion products aboard a research submersible vehicle designated for studying the seafloor and the bottom of the World Ocean in the interests of the Russian Navy after a fire broke out during bathymetric measurements," read a translation of the statement from the state-controlled TASS news service.

There is no denying that it takes a special type of sailor to volunteer to serve aboard a submarine. You literally live underwater in a steel tube for weeks—sometimes months—on end. You need to get used to foul air, a lack of sunlight and very tight quarters; and then there is the fact that the steel tube could all too easily become a watery metal tomb! Since the American Civil War, when the Confederate Navy launched the first successful military submarine, the CSN Hunley, submariners have known the risk. Even using the word "successful" in the same sentence with the Hunley is questionable as it succeeded in its attack, but 21 crewmen were lost in three sinkings of the boat. Many more submarine crews would face a similar fate.

https://nationalinterest.org/blog/buzz/steel-tomb-worst-russian-submarine-disasters-all-time-153216

East Asia

Kim's Reappearance in North Korea Reignites Nuclear and Missile Fears
Scott Snyder
World Politics Review, May 11, 2020

When North Korean leader Kim Jong Un mysteriously disappeared from public view for three weeks last month, triggering widespread rumors about his health, many international observers speculated about what could come next. His possible demise might lead to a contested succession that sparked domestic instability and the proliferation of North Korea's stockpiles of nuclear weapons and fissile material. Kim's reemergence on May 2, at the opening of a fertilizer plant in the city of Sunchon, has taken succession concerns off the table for now. But it is time to worry once again about North Korea's development of its nuclear and ballistic missile programs under Kim's continued rule.

Pyongyang tested a variety of short-range missile systems on at least five occasions in April, and March was the busiest single month for North Korean missile launches in the country's history. Recent tests included a short-range ballistic missile similar in size to the U.S. MGM-140 Army Tactical Missile System, with a range of roughly 250 miles, and large-scale multiple rocket launchers. When deployed, these systems would add to the North's extensive artillery capabilities and ensure that U.S. and South Korean command centers south of Seoul remain vulnerable to a conventional attack. North Korea's short-range testing of ballistic missiles violates United Nations Security Council resolutions, but Trump has dismissed concerns over these tests in the past, implying he may only respond more firmly to a longer-range missile test capable of striking the U.S. The testing of large multiple rocket launchers aligns with North Korea's aim to extend its strike range deep enough into South Korea to target the consolidated U.S. base at Camp Humphreys, 40 miles south of Seoul, and the South Korean F-35 fighter jets stationed at Cheongju Air Base, in central South Korea. Pyongyang's recent tests also appear focused on improving its ability to precisely and simultaneously deliver multiple projectiles to many different targets.

https://www.worldpoliticsreview.com/articles/28752/kim-s-reappearance-reignites-fears-of-north-korean-missiles-and-nuclear-weapons

Think Tanks

Nuclear Tensions Must Not Be Sidelined During Coronavirus

Ana Alecsandru

Chatham House, May 1, 2020

Despite face-to-face diplomatic meetings being increasingly rare during the current disruption, COVID-19 will ultimately force a redefinition of national security and defence spending priorities, and this could provide the possibility of an improved political climate at RevCon when it happens in 2021. With US presidential elections due in November and a gradual engagement growing between the EU and Iran, there could be a new context for more cooperation between states by 2021. Two key areas of focus over the coming months will be the arms control talks between the United States and Russia, and Iran's compliance with the 2015 Joint Comprehensive Plan of Action (JCPOA), also known as the Iran Nuclear Deal.

It is too early to discern the medium- and longer-term consequences of COVID-19 for defence ministries, but a greater focus on societal resilience and reinvigorating economic productivity will likely undercut the rationale for expensive nuclear modernization. Therefore, extending the current New START (Strategic Arms Reduction Treaty) would be the best, most practical option to give both Russia and the United States time to explore more ambitious multilateral arms control measures, while allowing their current focus to remain on the pandemic and economic relief.

https://www.chathamhouse.org/expert/comment/nuclear-tensions-must-not-be-sidelined-during-coronavirus

Assessing the NPT: 50 years on

Pulkit Mohan

ORF, May 1, 2020

The Nuclear Non-Proliferation Treaty (NPT) came into force on 5 March 1970 and completed 50 years this year. The treaty has been historically described as the "turning point in the global march towards disarmament." The objective of the NPT has been to "prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament." The NPT has 190 signatories, including five nuclear weapons states, and was extended indefinitely in 1995. With the NPT completing 50 years, it is important to re-evaluate and articulate the future of the treaty and the global nuclear non-proliferation and disarmament.

Since the treaty came into force in 1970, parties have come together every five years to review the implementation of the NPT at the 'NPT Review Conferences.' The conferences were designed for the envisioning and implementation of recommendations to further the process of global disarmament and assess substantive outcomes as a result of the NPT. The previous iteration of the conference in 2015 failed to reach a consensus on the final document created to promote the pillars of the treaty. The latest edition of the review conference was set to take place at the United Nations Headquarters in New York from 27 April to 22 May, 2020. However, it has been postponed due the global COVID-19 pandemic.

https://www.orfonline.org/expert-speak/assessing-npt-50-years-on-65513/

IAEA Updates Tool for Economic Assessment of Electricity Generation Technologies

Elisabeth Dyck

International Atomic Energy Agency, May 4, 2020

The IAEA has released a new version of a software tool for comparing the economics of different technologies for electricity generation. Developed and updated by the IAEA's International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), the Nuclear Energy System Economics Support Tool (NEST) evaluates the economics of different reactor types and fuel cycles. "NEST also

allows the comparison of economic characteristics of nuclear power plants with other sources, such as fossil fuel plants," said Andriy Korinny of the IAEA's INPRO Section. "We've expanded this latest version to include wind and solar power plants, in addition to other evaluation features. This will increase the usefulness of the tool for Member States."

NEST can be used to calculate costs such as total capital investment and levelized unit energy as well as financial figures of merit including return on investment, internal rates of return and net present values. Calculations can be performed for different nuclear fuel cycle conditions including a fuel assemblies purchase and spent fuel 'take-back' option, once-through fuel cycles and closed fuel cycles.

https://www.iaea.org/newscenter/news/iaea-updates-tool-for-economic-assessment-of-electricity-generation-technologies

Pandemic spending will force US defense budget cuts—some of which should come from nuclear weapons programs

Lawrence J. Korb,

Bulletin of Atomic Scientists, May 8, 2020

According to SIPRI's latest report, global defense spending has grown for five straight years and in 2019 amounted to almost $2 trillion. US defense spending has also grown significantly over this period. Since President Trump took office, the annual defense budget—which, at $740 billion, consumes more than half of federal discretionary spending—has increased by almost $100 billion compared to Obama's last budget, and during the Trump presidency, total US defense spending has amounted to almost $3 trillion. As a result, the US alone now accounts for about 40 percent of the world's total military expenditures and spends more than the next 10 highest defense spenders combined (seven of whom are our allies). In real terms—that is, taking inflation into account—the US defense budget is higher than it was during the Reagan military buildup or the wars in Korea and Vietnam.

In 2019, the combined budget of our two primary strategic competitors, Russia and China, was $326 billion—less than half of the Pentagon's annual spending. Moreover, these countries will also likely have to reduce spending on defense to cope with the damage caused by COVID-19.

https://thebulletin.org/2020/05/pandemic-spending-will-force-us-defense-budget-cuts-some-of-which-should-come-in-nuclear-weapons-programs/

The postponement of the NPT review conference. Antagonisms, conflicts and nuclear risks after the pandemic

Pugwash Conferences on Science and World Affairs

Bulletin of Atomic Scientists, May 12, 2020

The new coronavirus pandemic (COVID-19) has already inflicted great damage on a number of nations and on the world at large, resulting not only in many tens of thousands of deaths but also in

economic, financial and social crises. It also forced the international community to cancel or postpone a number of important meetings, including big international conferences. One such victim, unfortunately, is the 10th conference to review the operation of the Treaty on the Non-proliferation of Nuclear Weapons – a central pillar in the current architecture of nuclear arms control and disarmament. The 10th NPT Review Conference was scheduled for April 27 to May 22 of this year. However, the designated President of the Conference, Gustavo Zlauvinen, recently announced that the Review Conference has been postponed to a date not later than April 2021, depending on the state of the pandemic. This was, of course, an appropriate and necessary reaction to the COVID-19 crisis.

Ironically, the postponement represents an opportunity to address mounting pressures within the NPT regime. The risks for the Conference and, ultimately, for the Treaty itself, have been multiplying. There is a large list of serious worries and problems: the renewal of the nuclear arms race; the crisis in the architecture of nuclear arms control treaties; the crisis in the relations among nuclear weapon powers; new setbacks with regard to the Iranian nuclear deal and the proliferation crisis in North-East Asia; and growing antagonisms between nuclear-weapon-possessor and non-possessor states. It is therefore essential that the parties to the NPT use the time between now and the start of the Review Conference to look for ways to ensure substantive progress. If nothing is done, the situation is likely to become even worse.

https://thebulletin.org/2020/05/the-postponement-of-the-npt-review-conference-antagonisms-conflicts-and-nuclear-risks-after-the-pandemic/#

Contribute Articles

Indian Pugwash Society welcomes research articles from students, researchers and faculties on Space, Missile, nuclear technology, WMD proliferation, arms control, disarmament, export controls and other related issues. Articles should be crisply written and should address contemporary debates in the policy arena. Manuscripts submitted for the consideration of the Indian Pugwash Society should be original contributions and should not have been submitted for consideration anywhere else. For further assistance, please contact us at: indianpugwashsociety@gmail.com

The Indian Pugwash Society aims to promote the study, discussion, and knowledge of and to stimulate general interest in, and to diffuse knowledge in regards to problems relating on WMD proliferation, arms control, disarmament, space security, export controls, nuclear technology and other related issues. This newsletter is part of the project "Emerging Nuclear Order in Asia: Implications for India" sanctioned to us by Department of Atomic Energy-Board of Research in Nuclear Sciences (DAE-BRNS).

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